

## **R E M A R K S**

In this communication, Claim 84, 93, 104, 106, 111, 122, 128, and 147 have been amended. Claims 84-147 are pending. The Examiner's objections and rejections are as follows:

- I) The Examiner objects to various typographical errors in the Abstract and claims;
- II) Claims 104-120 were rejected under 35 U.S.C. 112, second paragraph, as allegedly indefinite;
- III) Claims 84-89, 91, 96-97, 100-109, 114-115, 118-126, 133-138, and 140-147 were rejected under 35 U.S.C. 102(b) as allegedly anticipated by US Pat. 6,251,639 to Kurn et al.;
- IV) Claims 84, 86-95, 98, 100-104, 106-113, 116, 118-132, and 134-147 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. 6,977,148 to Dean et al.; and
- V) Claims 99 and 117 were rejected under 35 U.S.C. 103(a) as allegedly obvious over Kurn et al. in view of U.S. Pat. 5,837,459 to Berg et al.

### **I. Various Objections**

The Examiner objected to certain typographical errors, including the repeating "kit" twice in the abstract, reciting "l)" in Claims 106-108 instead of "k," and reciting "c)" in Claim 147 instead of "f." (Office Action, page 2). Applicants have corrected these typographical errors by amending the abstract and Claims 106 and 147 as indicated above.

### **II. Indefiniteness Rejection**

The Examiner rejected Claims 104-120 under 35 U.S.C. 112, second paragraph, as allegedly indefinite (Office Action, pages 2-3). In particular, the Examiner alleges that there is insufficient antecedent basis for "the single stranded DNA" in step c), since previous steps only reference "DNA." This typographical error has been corrected by amending Claim 104 to recite "the DNA," rather than "the single stranded DNA." As such, Applicants submit this rejection should be withdrawn.

### **III. Novelty Rejection Over Kurn et al.**

The Examiner rejected Claims 84-89, 91, 96-97, 100-109, 114-115, 118-126, 133-138,

and 140-147 under 35 U.S.C. 102(b) as allegedly anticipated by US Pat. 6,251,639 to Kurn et al. (Office Action, pages 3-5). Applicants disagree with this rejection. Nonetheless, in order to expedite the prosecution of the present application, without acquiescing to the Examiner's rejection, while reserving the right to prosecute the original or similar claims in the future, the claims have been amended. In particular, Claims 84, 104, and 122 have been amended to recite that the riboprimer comprises: i) "only ribonucleotides," or "ii) only purine ribonucleotides and only pyrimidine nucleotides, wherein at least one of the pyrimidine nucleotides is a pyrimidine 2'-deoxyribonucleotide having a non-canonical substituent, which substituent is neither an H nor an OH, on the 2'-position of the deoxyribose sugar moiety." Support for this amendment can be found throughout the specification, including, for example, at paragraphs 3, 16, and 28. The Kurn et al. reference does not teach the use of primers composed of only ribonucleotides, and instead teaches the use of composite RNA/DNA primers, as noted by the Examiner on page of the Office Action. In fact, Kurn et al. describes the criticality of such composite primers:

The composite design of the primer is critical for subsequent displacement of the primer extension product by binding of a new (additional) composite primer and the extension of the new primer by the polymerase. (Col. 17, lines 10-13).

The Kurn et al. reference also does not teach primers where all the purines are ribonucleotides and at least one of the pyrimidines is a 2'-deoxyribonucleotide having a non-canonical substituent. As such, Kurn et al. does not anticipate the amended claims. Therefore, this rejection should be withdrawn.

#### **IV. Novelty Rejection Over Dean et al.**

The Examiner rejected Claims 84, 86-95, 98, 100-104, 106-113, 116, 118-132, and 134-147 under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. 6,977,148 to Dean et al. (Office Action, pages 5-7). Applicants respectfully disagree with this rejection and submit that Dean et al. does not teach all of the elements of the claims.

For example, Dean et al. does not teach a step of cleaving an annealed riboprimer with RNase H as recited in all of the pending claims. The Examiner cites various passages in Dean et al. as teaching the various steps of Independent Claims 84, 104 and 122 (Office Action, top half of page 6). However, only one of the cites provided by the Examiner describes the use of RNase H

(col. 34, lines 36-67). This description, which is the only place in the Dean et al. reference where RNase H is mentioned, does not teach the use of RNase H as recited in the present claims. For example, Dean et al. describes using RNase H to digest a *target RNA template* after cDNA has been made using a reverse transcriptase (Dean et al., col. 34, lines 37-51). The resulting single stranded cDNA is then used in multiple displacement amplification. Nowhere in this discussion (or in the rest of the reference) does Dean et al. describe the use of RNase H to cleave an annealed riboprimer with RNase H such that another primer can hybridize to the same template to repeat primer extension. As such, it is clear that Dean et al. does not anticipate the claims. Therefore, Applicants submit that this rejection should be withdrawn.

**V. Obviousness Rejection Over Kurn et al. In View of Berg et al.**

The Examiner rejected Claims 99 and 117 under 35 U.S.C. 103(a) as allegedly obvious over Kurn et al. in view of U.S. Pat. 5,837,459 to Berg et al. Applicants submit that this rejection is moot in view of the amendment to the claims reciting that the riboprimers comprise only ribonucleotides, or all the purines are ribonucleotides and at least one of the pyrimidines is a 2'-deoxyribonucleotide having a non-canonical substituent, since Kurn et al. fails to teach these limitations, and Berg et al. does not make up for this lack of teaching. As such, Applicants submit this rejection should be withdrawn.

**CONCLUSION**

For the reasons set forth above, it is respectfully submitted that Applicants' claims should be passed to allowance. If the Examiner wishes to discuss this case, Applicants encourage the Examiner to call the undersigned at 608-218-6900 at the Examiner's convenience.

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